

SUBSTITUTE SPECIFICATION

PATENT APPLICATION

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**FLEXIBLE LAMINATE FOR COATING
AND PROTECTION OF SURFACES,
~~AND MANUFACTURING METHOD OF THE SAME~~**

BACKGROUND OF THE INVENTION

1. Field of the Invention

~~[0001] The invention herein relates to flexible films such as linings to coat different furniture, accessories, etc. More specifically, it relates to antiskid and adhesive flexible laminates for coating different surfaces, and the manufacturing method of the same.~~

2. Description of the Related Art

~~[0001] [0002] A great~~Currently there are any number of laminate materials have been currently developed, aimed to coat differentfor covering various surfaces, for. For example, there are differentvarious types of decorating papers known as wallpaper with different engravings and printings, which necessarily require a surface with glue or adhesive material for adhering to the surface to cover; thus, said laminate products once placed are permanent are non decorative papers known as wallpapers or tapestry papers with various printed or embossed designs that require a glue or an adhesive material covered surface to adhere to the surface to be covered. Once applied, the laminated products are permanent and not removable. There are other laminate materialslaminates made of plastic materials, some of them consisting of simple coating plastic sheets; nonetheless, when placed, over for surfacing. Nevertheless when these are applied to smooth surfaces, they tend to skidslip and are generally unstable having skidding in the plane

~~of surface where they are placed or overlapped there are other laminate products consisting on woven materials adhered to plastic films, these skid likewise in surfaces; there are others consisting on woven materials with foamed materials to avoid skidding; said foaming is applied to such woven materials, nonetheless, foaming separates after the application, leaving foamed areas well defined on the threads, conforming a partially adhesive surface, because it contains foaming in the threads and in the spaces between them there is no foaming; such generates a surface with homogeneous foaming distribution areas, and homogenous distribution spaces without foaming, which could result on a little adhesive surface before the uniformity of contact points with the surface covered, evidencing slippage on the surface plane to which they are applied or overlaid.~~

[0002] There are other laminated products consisting of woven materials glued to plastic films, these also tend to slip at their surfaces. There are other materials woven of foam materials to avoid slippage, after application the foam separates leaving well defined foam areas at the threads, forming a surface that can only partially adhere, given that there is foam at the threads but not in the spaces between threads. This generates a surface with homogenous areas of foam distribution and homogenous spaces between them without foam that could result in a surface that does not adhere well given the uniformity of the points of contact of the surface to be covered.

[0003] On reviewing prior art, the following patents were found: US 6,130,174 of James J. Hawley, dated October 10, 2000; US 5,863,845 of Thomas Hendrix Owen, dated January 26, 1999; US 5,707,903 of Herbert S. Schottenfeld, dated January 13, 1998.

[0004] [0003] Searching for previous similar inventions, we found patents US 6,130,174 of James J. Hawley as of October 10th, 2000; US 5,863,845 of Thomas Hendrix Owen, as of

~~January 26th, 1999; US 5,707,903 of Schottenfeld Herbert S. as of January 13th 1998. The first of them~~
The first of these refers to a laminatelaminated material that has the characteristic of not skidding over
does not slip along a surface and provides a smooth surface is provided on the other side, whichand this protects a laminatelaminated product that generally comprisescomprised by a laminate layer of vinyl plastic,that is generally and continuously flat; a woven layer that comprises a woven material
includes a fabric covered with a foamed plastic made of a compound of polyvinyl chloride compound and linkingthe means of suehbonding the woven layer with suehthe flat laminated layer. This patent usesemploys for such purpose a woven layerlayer covered with a foamed plastic foam that generates spaces between adjacent threads, forming simply widths
forming thicknesses around the wovenfabric threads and the topupper layer is smooth.

[0005] ~~{0004}~~ Regarding~~With regard to~~ the second American patent located and mentioned in the previous paragraph, it refers~~patent indicated, reference is made to~~ a removable cover with non-adhesive and ~~nonskid removable cover, which~~non-slip coating that protects suehthe removable cover for a primary surface, comprisingthat includes: a substrate that has a top surface and a low surface
with upper and lower surfaces, where at least a partportion of suehthe lower surface comprisesincludes a non-adhesive and ~~nonskid~~non-slip surface; and a topan upper sheet adhered to sueh top surface of suehthe upper surface of the substrate, where, such that when said ~~nonskidthe lower non-slip surface of sueh substrate~~ is in contact with the primary surface, the cover does not ~~skid~~slip tangentially or laterally ~~in relation to suehthe primary surface, where the topupper sheet is a covered topupper sheet; and where the covered topupper sheet incorporates a coating that is selected from the group that consists on inkis comprised by coloring, wax, plateveneer and a combination of all the above these.~~

~~[0006]~~ ~~[0005]~~ Regarding ~~Then~~ the third and last American patent mentioned above, is a ~~nonskid~~ patent cited refers to a non-slip decorative lining veneer that protects a laminate lining to cover generally smooth surfaces, and the lining comprises: a nonskid cushion comprised by a material covered with a foamed laminated veneer for covering generally flat surfaces. This covering includes a non-slip cushion that includes a fabric covered with a polyvinyl chloride compound, to increase the extendible strength, having the cushion foam for increasing the extendable firmness, the cushion having first and second opposed faces in opposition and a plurality quantity of open cells extended extending through such the cushion from the first to the second faces; said face, the second face of the cushion comprises a frictional face fitted to hold being a friction-augmented face adapted to grip the surface and restrict the cushion's movement of on the cushion in the plane of surface plane when the second face makes contact with contacts the surface; said frictional, the friction-augmented face is free of adhesive substances; and a coating sheet cover layer that has opposing first and second opposed faces, said the second face of the coating sheet is cover layer being permanently attached joined to the first face of the nonskid non-slip cushion.

~~[0007]~~ ~~[0006]~~ In general terms, the laminates that cover such protected by these patents comprise basically primarily include as a substrate a woven media fabric or material cloth to which foaming a foam is applied to provide it with the antiskid non-slip properties and attach for bonding to a smooth top upper layer through by means of an adhesive. Nonetheless, said Nevertheless the laminates comprise their include a smooth top upper surface and little adherence in it on their lower face surface.

SUMMARY OBJECTIVES OF THE INVENTION

~~[0008]~~ ~~[0007]~~ The This invention herein has as its main objective purpose to make available a flexible laminate that allows will allow the coating and protection of different surfaces, either

~~decorative or antiskid. Another objective of the invention herein, is to provide such flexible laminate that besides avoids scratching, staining and damage of the surfaces covered.~~various surfaces, and that it be decorative and anti-slippage.

~~[0008] — Even another objective of the invention is to make available such flexible laminate, guaranteeing besides the smoothness of the surface covered to freely slide the items laying on the same.~~

[0009] Another objective of this invention is to provide the flexible laminate that will also prevent scratches, spots and ill treatment of the surfaces it covers.

[0010] Another objective of the invention is to make available the flexible laminate that in addition will guarantee the flatness of the surface covered so as to allow articles placed on it to slide freely.

[0011] [0009]—AndIn addition to all those qualities and objectives that will be evident when carrying out a description of the~~become apparent on describing this invention herein, supported in~~by the illustrated modes.~~—modalities.~~

BRIEF DESCRIPTION OF THE INVENTION

[0012] [0010]—In general terms, the flexible laminate for coating~~covering~~ and protection of~~protecting~~ surfaces, according to the~~in accordance with this invention herein, consists on a laminate~~of the lamination of two PVC layers of PVC, one composed by a non-woven saturated~~of an unwoven polyester material saturated with a foamed plastisol in order to generate an adhesive~~adherent surface with the characteristic of not skidding over~~that will not slip on the~~

surface ~~whereon which~~ it is placed, and the other consisting ~~enof~~ a decorative ~~film of~~ flexible PVC ~~film~~, smooth or texturized, ~~both attached~~joined together by means of a PVC adhesive.

[0013] ~~{0011} Said~~This flexible laminate ~~isbonds~~ firmly adhered to the surface to ~~cover,~~
~~guaranteeing thebe covered,~~ ensuring its protection and smoothness, and ~~likewise avoids~~
~~such~~flatness. It also prevents the laminate from ~~skidding through~~sliding over the surface ~~covered.~~
it covers.

[0014] ~~{0012} Said~~The flexible PVC decorative film, ~~may can~~ be engraved, ~~printed~~imprinted,
stamped or ~~in its combinations~~any combination thereof.

[0015] ~~{0013} Said~~The flexible laminate for covering and ~~protection of~~protecting surfaces,
has a thickness of ~~about~~approximately 34 or more thousandths of an inch ~~thick.~~

[0016] ~~{0014} To~~In order to better ~~understand~~comprehend the characteristics of the invention,
the description herein is attached, ~~as~~drawings described following are attached to illustrate,
without limitation, this description, of which they are an integral part of the same, with drawings
to illustrate, but not limited to that, described as follows. ~~.~~

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] ~~{0015}~~ A better understanding of the present invention can be obtained when the
detailed description set forth below is reviewed in conjunction with the accompanying drawings,
in which:

[0018] ~~{0016}~~ Figure 1 shows a ~~topan upper~~ view of the laminate for covering and ~~protection~~
ofprotecting surfaces.

[0019] ~~{0017}~~—Figure 2 shows a lower view of the ~~antiskid~~non-slip substrate for ~~coating~~covering and ~~protection of~~protecting surfaces.

[0020] ~~{0018}~~—Figure 3 shows a ~~transversal cut~~cross section of the flexible laminate for ~~coating~~covering and ~~protection of~~protecting surfaces.

[0021] ~~{0019}~~—Figure 4 shows a schematic diagram of the method and devices for stamping and laminate, ~~according to the~~laminating, in accordance with this invention ~~herein~~.

[0022] ~~{0020}~~—Figure 5 ~~shows~~illustrates a schematic diagram of the method and devices for ~~impregnation~~impregnating and ~~melting of~~fusing the plastisol, ~~according to the~~in accordance with this invention ~~herein~~.

[0023] ~~{0021}~~—Figure 6 shows a schematic diagram of the method and devices for ~~attaching~~bonding and conforming the layers in order to form ~~said~~the flexible film, for ~~coating~~covering and ~~protection of~~protecting surfaces, ~~according to the invention herein~~in accordance with this invention.

[0024] In order to better understand the invention, a detailed description will be given of some of its modalities, as shown in the drawings that are attached to illustrate, without limitation, this description.

[0025] ~~{0022}~~—To better understand the invention, we shall carry out the detailed description of some of the modalities of the same, shown in the drawings with illustrative but not limited purposes, attached to the description herein.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTSINVENTION

[0026] ~~[0023]~~ As illustrated in Fig. 1, the The characteristic details of the flexible laminate for coatingcovering and protection-ofprotecting surfaces, are clearly shown in the following description and in the illustrative drawings attached, ~~being the same useful as~~ which serve as points of reference signs to show the same to indicate the parts referred to which reference is made.

[0027] ~~[0024]~~ Regarding We make reference to Figures 1 and 2 that show a top upper and lower ~~view~~ views, respectively, of the laminate for coatingcovering and protection-ofprotecting surfaces ~~respectively~~. ~~Said figure shows laminate 1, comprising a top layer consisting on a top.~~ The figures show laminate (1) that includes the upper layer comprised by an upper decorative film of flexible PVC 2, layer (2), smooth and preferably, as in this is the case, engraved, and the lower layer consisting on composed of a continuous non-woven material 3, (3) saturated with a foamed plastisol (4) that generates an a lower irregular lower surface with spaces covered 5, by with foam (5) and free spaces 6, free of foam (6), providing an adhesive adherent surface with having the characteristic of non-skidding in not slipping on the surface whereon which it is placed.

[0028] ~~[0025]~~ Regarding With regard to Figure 3, showing a transversal cut 3 that shows a cross section of the flexible laminate for coatingcovering and protection-ofprotecting surfaces. ~~In said figure, it shows laminate (1 composed) formed by such the lower layer that is comprised by composed of the non-woven polyester 3, (3) that is saturated with the foamed plastisol (4); such the foamed plastisol generates an irregular lower surfaces with covered spaces 5, distributed heterogeneously with said surface with heterogeneously distributed spaces (5) covered with the foamed material 4, and spaces 6 distributed heterogeneously, (4) and heterogeneously distributed~~

spaces (6) free of the foamed material 4.—Such layer, comprised by said non-woven(4). The layer composed of the unwoven material 3(3) saturated with the foamed plastisol 4, being attached material (4) is joined by means of an adhesive film (7) to the upper flexible top and decorative film 2,(2).

[0029] ~~[0026]~~ RegardingWith reference to Figure 4, ~~showing4~~ that shows a schematic diagram of the method and devices for stamping and laminate. In such figure, ~~the laminating, supply spool 8, supplies the(8) feeds a film of flexible PVC film 2,(2) running through an entry accumulator 9 that collects such film through accumulating rollers 10, input accumulator (9) that accumulates the film by means of accumulator rollers (10) and proceeds later to a film stabilizer of(11), the film 11,(2) then said film 2, passesgoes through a series of stamping rollers 12,(12) that stampimprint the film with different stamps, according to what isvarious designs, as desired; once imprinted, the flexible PVC film 2, once stamped,(2) is drivenwound on to a wrapping roller (13- of) for stamped film.~~

[0030] ~~[0027]~~ With regard to Figure 5, showing5 that illustrates by a schematic diagram of the method and devices to impregnatefor impregnating and melt plastisol, according to the invention herein. Such figure supplies the non-woven polyester 3 throughfusing plastisol, in accordance with this invention, that Figure shows that unwoven polyester (3) is provided from a roll 14, passing(14) running through leadsome guide rollers (15) that guide it to applying some rollers (16- of) applying foamed plastisol (4) from a deposit-repository (17); once the foamed plastisol is(4) has been applied 4 in that non-woven to the unwoven polyester layer 3,(3), it goesis run through an oven 18, for the corresponding seasoning(18) in order to cure it. When the non-wovenunwoven polyester 3,(3) impregnated with foamed plastisol 4, goes(4) comes out of the oven 18,(18), it passesis run through the first cooling rollers 19,(19) and then after leadthrough guide rollers (20) and then on to later pass through second cooling rollers 21,(21) and from there

to an accumulator 22,(22) that ~~gathers~~accumulates it ~~through~~on accumulating rollers 23,(23) to later guide it to a ~~collecting~~collector spool 24 ~~of non-woven~~(24) for unwoven polyester with the foamed plastisol, ~~making a sole~~now constituting one film.

[0031] ~~{0028}~~ Regarding With reference to Figure 6 that shows a schematic diagram of the method and devices ~~to attach and conform~~for bonding and conforming layers ~~for in order~~to form such ~~the~~flexible film for ~~coating~~covering and protection of surfaces, according to the invention herein. In such figure, ~~non-woven polyester 3,~~protecting surfaces, in accordance with this invention, that Figure shows that the unwoven polyester (3), impregnated with foamed plastisol 4,(4), once seasonedcured is supplied through a roll 25,~~passing~~(25), then run through an adhesive transfer roll 26,(26) placed ~~on the bottom,~~below which transfers adhesive (27) from the adhesive deposit (28; ~~then~~). Then, from a supply spool 29,(29) the flexible PVC decorative laminate (2) is unrolled, joined and ~~overlapped and fitted against~~coupled to the face of the ~~non-woven~~unwoven polyester layer 3,(3) saturated with foamed plastisol 4,(4) covered with adhesive 27, ~~passing~~(27), then passed through pressure rollers 30,(30) and afterwards~~later~~ through a ~~laminating devise 31,~~laminator (31) that laminates and ~~also~~simultaneously provides additional pressure, ~~conforming laminate 1 according to the invention herein; such laminate passes finally to constitute laminate (1) in accordance with this invention. The laminate is finally run through an accumulator 32, through~~(32) via accumulating rollers 33, ~~and finally is driven to a~~(33) and is finally wound on to finished product roll 34, roller (34).

[0032] ~~{0029}~~ The invention has been sufficiently described ~~so that~~as to allow a person with average knowledge in the ~~matter may~~such matters to reproduce and obtain the results we have mentioned in ~~the~~this invention herein. ~~Nonetheless. Nevertheless,~~ any person skilled person in the field of technique, subject of the invention herein, ~~may carry out modifications in the technical area related to this invention would be capable of making changes not described in the~~this

~~request herein, so that to apply these modifications to a determined~~such changes in a given
~~structure, or in the~~its manufacturing process ~~of~~would require the same, ~~requires the~~
~~claimed~~subject matter in ~~the~~laid claim to following ~~claims;~~, such structures shallshould be
~~covered~~included within the scope of the invention.

~~[0030] It should be noted and understood that there can be improvements and modifications~~
~~made of the present invention described in detail above without departing from the spirit or~~
~~scope of the invention as set forth in the accompanying claims.~~

ABSTRACT

~~The invention herein is an antiskid and adhesive~~ A flexible, non-slip, adherent laminate for ~~coating different~~ covering various surfaces and ~~theits~~ its manufacturing method of the same, ~~being such~~ are disclosed. The laminate is characterized as ~~consisting of~~ by two layers, ~~one lower~~ comprised by a non-woven a lower one composed of an unwoven polyester material of polyester, saturated with a foamed plastisol to generate ~~an adhesive~~ a lower adherent surface; and the other consisting ~~on aof~~ of an upper decorative flexible PVC ~~decorative top~~ film, both ~~attached~~ joined together by means ~~of a~~ of a PVC adhesive, ~~and such~~. The method ~~comprises the steps of~~ involves supplying ~~non-woven polyester;~~ application of foamed plastisol in the top face of ~~such non-woven polyester;~~ seasoning of non-woven the unwoven polyester; applying foamed plastisol to the upper face of the unwoven polyester; curing the unwoven polyester saturated with foamed plastisol in ~~the seasoning~~ a curing oven; cooling ~~of non-woven~~ the unwoven polyester saturated with foamed plastisol, once seasoned; ~~application of~~ cured; applying adhesive into the lower face of the polyester; supplying the decorative flexible PVC ~~deceerative~~ laminate ~~against~~ to the lower face of the polyester covered with adhesive; ~~pressuring~~ applying pressure to the assembled laminate ~~as a whole;~~ accumulating the laminate; and collecting the laminate.